THE ZOOLOGIST.

THIRD SERIES.

VOL. II.] JUNE, 1878. [No. 18.

THE ROOKS AND ROOKERIES OF LONDON, PAST AND PRESENT.

BY EDWARD HAMILTON, M.D., F.L.S.

WITH the exception of the ubiquitous House Sparrow, no birds frequenting our London parks and trees are so familiar to us as our black-coated friends the Rooks, or, as they are commonly but erroneously called, Crows. Winter and spring, summer and autumn, they may be seen stalking about searching for food, confident in their security, claiming friendship with man, yet wary withal, for they never allow too near an approach. Never disturbed by crow-boy or gun, their progeny protected and allowed to gain maturity, no rook-shooting parties to molest them, they are happy in the dust and turmoil of this overgrown city.

The Rook, indeed, is to the citizen what the Nightingale is to the countryman—the harbinger of spring; and there are few pleasanter sounds in nature than the harmonious cawing from the lofty elm which greets the ear at Eastertide. We never pass beneath a Rookery in early spring, or listen to the distant voices of our sable friends without being reminded of Longfellow's lines in 'The Birds of Killingworth':—

> "Do you ne'er think what wondrous beings these?
> Do you ne'er think who made them and who taught
> The dialect they speak, where melodies
> Alone are the interpreters of thought?
> Whose household words are songs in many keys
> Sweeter than instrument of man e'er caught!
> Whose habitations in the tree tops even
> Are half-way houses on the road to heaven!"

Alas! the Rooks and Rookeries so pleasant to old Londoners are gradually diminishing and disappearing, and the London Rook, to our grandchildren, will be a bird of the past. The cause is not far to seek. The extension of buildings limits their feeding ground, and they have farther and farther to go to seek sustenance for themselves and their young. The Parks are now so cut up with walks and so frequented, that the birds can find but little repose and but scanty subsistence. When the writer first came to London the elms in Hyde Park and Kensington Gardens were in the finest condition. Herds of Fallow Deer frequented the glades, and there was only one walk across Hyde Park from where the Marble Arch now stands to the Wellington Statue. All the rest was luxuriant grass, affording abundant food for birds and beasts. "*Tempora mutantur!*"*

Beginning westward, the first Rookery to notice is that in the grounds of Holland House, one of the most ancient in the land. The trees bordering the high road were formerly covered with nests; now there are only four, and thirteen more in the avenue. In the days when Addison wrote, and in later days, when Sheridan, Jeffery, Byron, Brougham, Lyndhurst, Tom Moore, Macaulay, and a host of other wits and celebrities passed under that grand avenue to the splendid hospitality of that glorious mansion, the Rookery was in its prime. Those great names are reminiscences of a great time in England's history, and are now of the past, and so soon will be the Rooks and the Rookery.

A colony of Rooks has existed for many years in the high trees in the north part of Kensington Gardens. This Rookery, in 1836, extended from the Broad Walk near the Palace to the Serpentine, where it commences in the Gardens, and there must have been very nearly one hundred nests. The Rooks were very busy and their voices very merry when our present gracious Queen first saw the light in the south-east apartments of Kensington Palace, on May 24th, 1819; and their descendants were as merry and as busy when her Majesty held her first Council on her Accession, in that same Palace, on June 28th, 1837. Even now the younger scions of our royal family can hear the "caws" of the old and the feeble cries of the young Rooks, descendants of the old colony, now, alas! reduced to thirty-one nests, and confined to a few of the upper trees skirting the broad walk near the North Gate.

---

* It is perhaps not generally known that in 1533 Rooks and Crows were so numerous, and were thought to be so detrimental to the farmers, that an Act was passed for their destruction. Every hamlet was to provide "Crow-nets" for two years, and the inhabitants were obliged at certain times to assemble and concert measures for the destruction of these birds.—ED.

A few years ago a pair of Rooks took possession of the plane tree in the grounds of the Deputy Ranger of Hyde Park. The colony increased, and numbered ten nests in 1870; dwindled again to two in 1874; increased to seven in 1877; and again diminished to two in 1878. Some new buildings have been erected close by: this may be the cause of the diminution at the present time.

A Rookery formerly existed in the Green Park, in the elm trees at the end of the garden belonging to the Green Park Lodge, the residence (if my memory serves me) of the late Princess Amelia. When the Lodge was pulled down some of the trees were also destroyed and the Rooks all left. The Rookery in Chesterfield Gardens then existed, but I think about this time the nests in Wharncliffe Gardens were commenced, and (as I suspect) by the Rooks from the Green Park which migrated from those trees.

If the great Lord Chesterfield could revisit the scene of his greatness here on earth, what would he see? His house remains, it is true, but in what desolation! The garden, described by Beckford as the finest private garden in London, entirely destroyed and covered with modern mansions; the stately elms, with their sable inhabitants, all gone; the beautiful colonnade in the court-yard demolished; nothing but the mansion left, despoiled of all its beauty and significance! In those old elms above that old bulging wall in Curzon Street there were, in 1846, close upon fifty nests, and two in Lord Wharncliffe's garden. Now the trees are all gone and the Rooks too. The colony in Wharncliffe Gardens has increased from two to ten nests, which are at present confined to three or four plane trees behind the mansion. A year or two ago there were a few in trees in the outer garden.

In 1875 a Rook's nest was built and the young hatched in a tree at the back of Hereford Square, Brompton. The following year the birds with returned others, and ten nests were built in the fine elm and plane trees there, thus establishing a fine colony.

A Rookery formerly existed in the trees in the Gardens of Carlton House; but this was destroyed in 1827, when the trees were cut down and the old house demolished, when the Rooks emigrated to a plantation at the back of New Street, Spring Gardens.

In the gardens of Brunswick House, in the New Road, opposite Devonshire Place, a colony of Rooks has been established for some years. I find from my notes that in 1840 there were twenty nests in the plane trees of Brunswick House, and five in the trees overhanging the New Road. In 1858 (an extraordinary mild season), on January 23rd, Rooks were building in the plane trees of Brunswick House fifteen nests. In 1876 I counted seventeen nests. This year, on April 15th, fifteen nests, which now occupy only three of the plane trees nearest the Regent's Park. The tree overhanging the New Road is untenanted, although in 1875 it contained a single nest.

In some plane trees in a garden on the east side of Gower Street are three Rooks' nests, and two others in a plane tree in the garden of No. 5, Gordon Place, Gordon Square.

There was formerly a considerable Rookery in the Temple Gardens, in the elms in the King's Bench Walk.* When they ceased to build there I cannot ascertain exactly. One of the porters tells me that he has been in the Temple, man and boy, between forty and fifty years, and he cannot remember any Rooks or nests there. In Goldsmith's time it was a flourishing colony. In his 'Animated Nature,' printed in 1774, he says:—

> "The Rook, as is well known, builds in woods and forests in the neighbourhood of man, and sometimes makes choice of groves in the very midst of cities for the place of its retreat and security: in these it establishes a bond of legal constitutions, by which all intruders are excluded from coming to live among them, and none suffered to build but acknowledged natives of the place. I have often amused myself with observing their plan of policy

---

* The history of this colony is rather curious. It was founded in Queen Anne's time by Sir Edward Northey, the well-known lawyer of that period, who colonized the place with birds from his estate at Epsom. A bough was cut from a tree with a nest containing two young Rooks, and taken in an open waggon from Epsom to the Temple and fixed to a tree in the gardens. The old birds followed their young and fed them, and they remained and bred there. The following year a Magpie built in the gardens. Her eggs were taken, and those of a Rook were substituted, and in due course were hatched there. "It was a pleasant thought," as Leigh Hunt observes, "supposing the colonists had no objection. The Rook is a grave legal bird, both in his coat and habits; living in community, yet to himself, and strongly addicted to discussions of *meum* and *tuum*."—Ed.

from my window in the Temple that looks upon a grove where they have made a colony in the midst of the city. At the commencement of spring the Rookery, which during the continuance of winter seemed to have been deserted or only guarded by about five or six, like old soldiers in a garrison, now begins to be once more frequented; and in a short time all the bustle and hurry of business is fairly commenced; where these numbers resided during the winter is not easy to guess, perhaps in the trees and hedgerows to be nearer their food. In spring, however, they cultivate their native trees: and in the places where they were themselves hatched they prepare to propagate a future progeny."

The birds whose habits are thus so graphically described must have been in the height of happiness, and in the bustle of their business, when poor Goldsmith was on his deathbed, and their voices may have been his funeral requiem when he was placed in his grave in the Temple burial-ground, on the evening of Saturday, April 9th, 1774, almost overshadowed by those elm trees—

"Where the Bat circled, and the Rooks reposed,
Their wars suspended and their councils closed."

Twenty-five years ago the Rookery in College Gardens, Doctor's Commons, still existed. Hone, writing of it in April, 1826, in his 'Every Day Book' (vol. i., p. 494), has the following anecdote concerning it:—

"Amongst the deliramenta of the learned, which have amused mankind, the following instance merits a particular rank. Some years ago there were several large elm trees in the College Garden behind the Ecclesiastical Court, Doctor's Commons, in which a number of Rooks had taken up their abode, forming in appearance a sort of convocation of aërial ecclesiastics. A young gentleman who lodged in an attic, and was their close neighbour, frequently entertained himself with thinning this covey of black game by means of a crossbow. On the opposite side lived a curious old civilian, who, observing from his study that the Rooks often dropped senseless from their perch, or as it may be said, without using a figure, 'hopp'd the twig,' making no sign, nor any sign being made to his vision to account for the phenomenon, set his wits to work to consider the cause. It was probably during a profitless time of peace, and the doctor, having plenty of leisure, weighed the matter over and over, till he was at length fully satisfied that he had made a great ornithological discovery, that its promulgation would give wings to his fame, and that he was fated, by means of these Rooks, to say, 'volito vivus per ora verum.' His goosequill and foolscap were quickly in requisition, and he actually wrote a treatise stating circumstantially what he had himself seen, and in conclusion giving it as the settled conviction of his mind that Rooks were subject to the 'falling sickness.'"

Few people, save lawyers and their clients, ever visit one of the quietest precincts in the city of London, *viz.*, Gray's Inn. Turning out of noisy Holborn or Gray's Inn Lane, the most perfect stillness suddenly prevails; another city seems to have arisen; quiet alleys and paved courts shut out the noise of the busy world; a solitary footstep—made still more solitary by its echo—breaks upon the ear. Can this be in the midst of London? Even so, and in that great Square the chief noise is the "caw" of the Rooks.

In the gardens of Gray's Inn may still be seen the largest Rookery in London. How long it has been established I have not been able to ascertain. The elm trees were planted by Lord Bacon. It was probably coeval with that of the Temple, and probably increased when the Temple Rookery was abandoned. Six years ago there were thirty-eight nests. Two years later some of the trees were blown down, others were cut down, and the Rookery was nearly annihilated; a few nests only remained on some plane trees. The Gardens having been kept very quiet, and all noisy children excluded, the Rooks are gradually returning, and this year, on April 28th, there were twenty-eight full nests with birds sitting, and four unfinished. On going round the garden I was informed that every morning one of the residents feeds the Rooks, and that often as many as eighty birds have been counted. Now as twenty-eight nests will only give fifty-six birds, the rest must come from a distance—probably the birds of a former year. Let us hope, from the care taken, that this Rookery will long flourish and increase. The gardens are beautifully clean, and the birds as glossy as if they made their nests one hundred miles from this smoky city.*

For some years a pair of Rooks built their nest in the plane tree at the corner of Wood Street, Cheapside. I have notes of this in 1835, 1836, 1837, and 1838. Yarrell says that they did not use the nest after 1836, but this is a mistake. Probably these birds were the same who built their nest previously on the Dragon of

---

* Some notes on the Rookery of Gray's Inn appeared in 'The Field' of the 17th and 24th April, 1875, and 26th February, 1876.—Ed.

Bow Church spire.* Mr. Harting, in his 'Birds of Middlesex,' states that in 1845 there were two nests in this tree. I have no record of this circumstance. The same author states that, in 1838, a pair of Rooks made their nest on the crown which surmounted the vane of St. Olave's Church, Crutched Friars.

I know of no Rookeries further East in London,—that is, "London proper,"—for we must exclude the outlying districts from our limits.

[There used to be some Rooks' nests in the burial-ground of St. Dunstan's in the East, in Tower Street; and in 1876 a pair of Rooks took up their quarters and built their nest in Bermondsey Churchyard.—Ed.]

ON THE REPORTED OCCURRENCE OF A GARE-FOWL IN THE FÆROES.

By H. W. Feilden, F.G.S., C.M.Z.S.

When on a visit to the Færoe Islands in 1872, I heard that an uncommon bird had been killed more than a year previously in the neighbourhood of Porkere, in the island of Suderoe. After talking the matter over with Herr H. C. Müller in Thorshavn, he gave his opinion that the description which had reached him of this bird agreed so well with what might be given of the Gare-fowl, *Alca impennis*, that he considered it worth the while of some qualified person to proceed to Suderoe and investigate the matter.

---

* During the rough weather of November last the dragon-vane of Bow Church was so bent and damaged by the wind that it not only ceased to work properly, but became positively dangerous. This being the case, it was determined to take it down for repairs; and the work was entrusted to Messrs. A. Proctor & Co., engineers and lightning-conductor makers. The height of the spire is 220 feet (some eighteen feet more than the Monument on Fish Street Hill) and the length of the vane is eight feet six inches. Ladders were placed close against the building and secured by a spike at the top; the second ladder being then hoisted from the first with a block and rope, the foot being well secured to the top of the other, and the second made fast as before, and so on until reaching the top. Three ladders were used to get to the vane from the top balcony of the church. Mr. Proctor and his men were assisted by one John Ives, of Huddersfield, who has had many years' experience, and who climbed twenty feet of the naked spire, there being no holdfasts or anything to assist him, and drew the ladder up after him. A stage was then erected about three feet below the ball, upon which a derrick was placed to lift the dragon from the spindle. After everything was ready there was a delay of several days owing to the violent winds making it dangerous to attempt the work of removal. This, however, was safely accomplished on the 23rd November, and about three weeks afterwards the dragon and ball, having been repaired and re-gilt, and the spire itself re-pointed, they were successfully replaced by the same means as had been employed for their removal.—Ed.

Being desirous of examining the coal-beds (lignite) of Suderoe, the additional prospect of obtaining information about a rare bird added zest to my wishes, and a journey of a fortnight, during which I visited the islands of Sandoe, Skuoe, Great Dimon, as well as Suderoe, was the result.

On arriving at Porkere, in Suderoe, towards the end of May, 1872, I made enquiries about the rare bird that had been shot there; but only elicited that an uncommon bird, a Rook (*Corvus frugilegus*), had been procured the previous winter. Being almost ignorant of Danish, and knowing nothing of Færoese, I was certainly not a competent person to institute an enquiry amongst people who had no acquaintance with English.

After my return to Thorshavn, on mentioning the result of my researches to Herr Müller, he was not satisfied that I had got to the bottom of the matter, and he agreed to make further enquiries through the Sysselmand (magistrate) of Suderoe.

In the following year (1873) a deposition was made before the Sysselmand of Suderoe by the parties who killed the bird, supposed possibly to have been a Gare-fowl (*Alca impennis*); and Herr Müller kindly sent me a copy of the document in question, which I received just prior to my embarkation for foreign service, in 1873. However, being placed on one side, it escaped my memory until a few days ago, when it accidentally turned up.

Though fully five years have elapsed since the deposition was made, I think it is deserving of record, not because it is in itself satisfactory evidence of the appearance of the Gare-fowl of late years in Færoe, but because it is a statement which, in all probability, will be handed down as a tradition in those islands of an actual capture of a Gare-fowl, and our successors may lament the apparent want of energy on our part in not having thoroughly investigated the circumstance at the time. I therefore, without further apology, append a translation of the deposition.

[Translation.]

"I, the undersigned Jacob Müller, of Porkere, hereby declare, according to truth, that one day in the month of November, 1870, when in company with Morten Nygaard, also of Porkere, I was out in a boat off Porkere-næs, for the purpose of shooting, and killed a bird that was swimming on the sea.

"In appearance this bird was like a young 'Alka' (Razorbill, *Alca torda*). The beak was more like that of an 'Alka' than that of a 'Lomvia' (Guillemot, *Uria troile*). The length of the beak was that of the 'Lomvia.' It had at least one spot above each eye. The body was shorter, but about as broad as a young 'Havgaas' (Great Northern Diver, *Colymbus glacialis*). The bones in the thigh were like those of the 'Havgaas'; the feet were like those of 'Lomvia,' but light coloured on the under side, black on the upper. The bird weighed 5 ℔s. Danish (5½ ℔s. English).

JACOB MÜLLER.

"The above facts are testified to.

MORTEN NYGAARD.
Porkere, 27th May, 1873.

"Witnesses—G. EFFERSO.
JOHAN LARSEN."

It will no doubt strike the reader, as it has the writer, that no reference is made to the wing of the bird, which in the case of a Gare-fowl would surely have at once attracted attention. The deposition of the two Færoese fishermen and cragsmen was made without any prompting or suggestion, and it is possible that when describing the bird as like a young Razorbill they implied that the wings were not developed. That the bird was not *Colymbus glacialis* or *Colymbus septentrionalis* is positively certain, for the Færoese fishermen know these species accurately, as well as all others commonly frequenting their islands.

Of one thing I am certain, namely, that if the bird shot and probably eaten by Jacob Müller of Porkere, was not a Gare-fowl, it was a strange visitant, and sufficiently uncommon to attract the special attention of the two men. Everyone who has had the opportunity of mixing with the simple-minded, truthful inhabitants of Færoe will agree with me that such a statement as is here printed would not have emanated from the source it has without some good reason.

In 'The Zoologist' for November, 1872 (pp. 3280—3285), the reader will find all the information which I could collect concerning the Gare-fowl in the Færoes to that date. The above may now be added by way of supplement.

—o—

THE MAMMALS OF SHAKSPEARE.

By Henry Reeks, F.L.S., F.Z.S.

(Continued from p. 173.)

The Wild Cat, *Felis catus*.

Although once abundant in our woods and forests the Wild Cat is now nearly extinct, the few which still survive being confined to the mountainous parts of Scotland and North of England. This is as it should be: we can quite dispense with this rapacious feline in our well-kept and well-stocked woods in the South. A few weeks since a writer in 'The Field' mentioned that he had seen some old paintings or prints of "Hunting the Wild Cat"; but I imagine that it was never considered "royal" sport, otherwise it would for a certainty have been attended to by Shakspeare, who was apparently well acquainted with the habits of the animal. In allusion to its preying by night and sleeping by day, he makes Shylock say—

> "He sleeps by day
> More than the Wild Cat."
> *Merchant of Venice*. Act ii., Scene 5.

When roused to fury perhaps no animal of its size is comparable to the Wild Cat for pluck and savageness. Mr. St. John, in his 'Highland Sports,' gives an interesting account of a fight with one of these savage brutes, which sprang straight at his face when six or seven yards distant, and had he not struck her in mid-air she would certainly have done him some serious injury. Mr. St. John adds that "if a tame cat has nine lives a wild one must have a dozen"!

In *Taming of the Shrew*, Act ii., Scene 1, Shakspeare makes Petruchio say—

> "Thou must be married to no man but me;
> For I am he am born to tame you, Kate;
> And bring you from a Wild Cat to a Kate
> Conformable, as other household Kates."

The Lynx, *Lyncus virgatus*.

The Pard, or Mountain Cat, is frequently mentioned by Shakspeare, but I know not to what animal the poet refers, unless it be to the Lynx. In Newfoundland the Lynx, *Lyncus canadensis*, is invariably called the "mountain cat." Some authors identify the "pard" with the Leopard, or any spotted feline; but the following quotation from *As You Like It*, Act ii., Scene 7, can scarcely apply to the Leopard:—

> "Then a soldier,
> Full of strange oaths, and *bearded* like the pard."

On the other hand, it is doubtful whether the Lynx would be sufficiently strong to kill a deer; therefore, in the following extract, perhaps Shakspeare alluded to the Leopard:—

> "As fox to lamb, as wolf to heifer's calf,
> Pard to the hind," &c.
> *Troilus and Cressida.* Act iii., Scene 2.

THE CIVET, *Viverra civetta.*

This well-known animal is an inhabitant of tropical Africa. Some authors state that it is also found in Madagascar, but I believe that the Madagascar Civet is not only a different species, but is referred even to another genus, and is peculiar to the island.

The Civet, often miscalled "Civet *Cat*," has for generations been a favourite sign for perfumers. Two hundred years ago a Dutchman wrote the following lines under the painted sign of a Civet:—

> "Dit's in de Civet Kat, gelyt gy kunt aanschouwen,
> Maar komt hier binnen, hier zyn parfuimen
> Voor mannen en vrouwen."*

Formerly the substance procured from the pouch of the Civet, and which is now only used as a scent, was considered a panacea of great efficacy in certain complaints; for this purpose it appears to have been in request in Shakspeare's time:—

> "Give me an ounce of *civet*, good apothecary, to sweeten my imagination: there's money for thee."
> *King Lear.* Act iv., Scene 6.

The "musk" of the Civet was in those days very expensive, and could be used only by the wealthy in such an extravagant way as scent: hence only

---

* 'History of Signboards,' p. 162.

> "The courtier's hands are perfumed with civet."
> *As You Like It.* Act iii., Scene 2.

In *All's Well that Ends Well,* Act v., Scene 2, the Civet is called a "musk-cat."

THE WOLF, *Canis lupus.*

There are few animals that have got a worse name, and perhaps deservedly so, than the Wolf. Individually it is one of the most cowardly of animals, but collectively it proves one of the most dangerous among wild animals; in fact, I believe a hunter would run a greater risk of "getting the worst of it" from a pack of hungry wolves—and wolves are *always* hungry—than from a troop of lions. The latter may be easily avoided unless the hunter courts a fight; but not so with the wolves. Keen-sighted and remarkably fleet of foot, they at once commence the attack, not always openly, but generally so. In Newfoundland I have known them display considerable strategy in the capture of the Cariboo (*Rangifer caribou*). In autumn, when the hills are covered with snow, the deer come down to feed in the marshes, many of which, although of considerable extent, are surrounded by belts of conifers, chiefly the black spruce (*Abies nigra*), through which the deer have well-known and well-trodden paths. In the leeward paths some of the wolves hide themselves, while others run round to windward of the deer, which is generally sufficient to start a whole herd to leeward at full speed, and consequently right into the jaws of the secreted wolves. The settlers affirm that the wolves generally adopt this easy manner of hunting the Cariboo just after the bucks have shed their horns. On one occasion I measured the "strides" of a couple of wolves that had passed close by the door of my house during the night in chase of a Cariboo stag, and found them to be from sixteen to eighteen feet! Imagine clearing the locks of a canal, barge, bargemen and all at every stride, and going at racing speed.

Well does Shakspeare bring out the true character of the wolf when he makes Antonio say:—

> "I pray you, think you question with the Jew:
> You may as well go stand upon the beach,

And bid the main flood bate his usual height:
You may as well use question with the wolf,
Why he hath made the ewe bleat for the lamb," &c.
Merchant of Venice. Act iv., Scene 1.

And again Antonio's friend Gratiano says of Shylock :—

"Thou almost mak'st me waver in my faith,
To hold opinion with Pythagoras,
That souls of animals infuse themselves
Into the trunks of men : thy currish spirit
Govern'd a Wolf, who, hanged for human slaughter,
Even from the gallows did his fell soul fleet,
And, whilst thou lay's in thy unhallow'd dam,
Infus'd itself in thee ; for thy desires
Are wolfish, bloody, starv'd and ravenous."
Id.

Shakspeare mentions the wolf upwards of fifty times, but it is unnecessary to give further quotations.

(To be continued.)

CORRECTION OF AN ERROR.—At p. 16~~7~~, for "the old belief in cows being *suckled* 9
by hedgehogs," &c., read "*sucked* by hedgehogs."

OCCASIONAL NOTES.

FAUNA OF THE LAKE DISTRICT.—With reference to a remark of Mr. W. A. Durnford (p. 121) as to the absence of Quail in the Lake District, I may say that some years ago I heard of a bevy of Quail being seen in September at Urswick, near Ulverston. They may possibly have been bred in the district, but I never heard of their having been seen except upon that occasion. In the Fylde District, between Lancaster and Preston, single birds were a few years ago not very uncommon, and on several occasions I have myself seen them when shooting in that district. Last autumn, however, on enquiring of the keeper, he told me he had not seen a single bird during the last two seasons. In the higher part of Furness black-game are by no means rare, though certainly not in anything like the number they are in the south of Scotland, perhaps owing to the very little grain grown in the hill parts of Furness. Grouse in some localities are fairly plentiful. The Dotterel used, at one time at all events, to breed on Saddleback (the next mountain to Skiddaw), and the last time I ascended that mountain (which, however, is some years ago) I caught a glimpse (there being a thick mist at the time) of one running amongst the short bent just ahead of us. During the winter the Common Scoter (locally called "doucker") is very plentiful in Morecambe Bay, and on one occasion I shot a bird of this species on an inland tarn two or three miles from the sea. At high tide, especially in wild weather, large flocks of the common Wild Duck collect in the bay to the seaward side of the embankment of the Ulverston and Lancaster Railway, just where it crosses the estuary of the Leven, and apparently they pay but little attention to the passing trains. The Goldeneye is often seen during hard weather on the inland ponds and tarns, and a few years ago I shot a Tufted Duck on the Leven, which runs out of Windermere. That Woodcocks breed in the district is undoubted, nor do I think the fact at all exceptional, as they may frequently be seen on a summer evening in High Furness flitting past in the twilight. This particular portion of the district is almost an unbroken area of coppice-wood, and for this reason, as it seems to me, all endeavours to get up any considerable head of Pheasants have hitherto proved useless, as the birds have so far to run to reach any open cultivated space either for natural food or for sunning purposes. The Common Buzzard I have seen in Eskdale, and there also I have known the Marten (locally called "sweet mart," in contradistinction to the "foul mart," *i. e.* Polecat) to be trapped. The only instance I ever heard of a Badger being seen in this district was some years ago when one was run over by a train on the Furness Railway near Broughton. Hill Foxes are plentiful enough. Otters fairly so. Last year there was one of the latter which varied its scene of operations a good deal, sometimes choosing the Leven, sometimes the Crake, or the brook running down Rushand Valley. I do not think Woodcocks make their appearance here in autumn in anything like the numbers they did formerly. I remember, when a boy, an old farmer telling me he had in one season snared sixty with a "springe" set in the soft bottoms. Last season they were, however, rather more plentiful; but probably, as high farming progresses, increased drainage will still further lessen their numbers. Quantities of eels are caught every autumn in a fish-coop at a mill on the Leven. This migration from the lake only lasts a short time, during which I understand immense quantities come down the river; but the moment that the first snow whitens the tops of the highest hills the movement is suddenly and mysteriously checked.—EDWARD T. BALDWIN (Woodcroft, Ulverston).

GOATS EATING YEW.—From personal experience I am able to state that I have frequently seen goats eat yew with impunity. For many years I kept goats with my cows, but they used to get into my shrubberies and eat everything they could reach, even the tall hemlock stalks. Notwithstanding what Gilbert White says (*vide* p. 177), it is quite a mistake to suppose that deer and sheep can do so without being poisoned. A friend of mine lost, I think, twenty-five ewes from eating the clippings of a yew hedge, and I have heard of certainly more than one instance of deer being poisoned from the same cause. It always seemed to me extraordinary that goats, which, through the antelopes, are perhaps more nearly allied to deer than to sheep (both of which, however, suffer), should be able to eat such a dangerous poison with impunity; but I remember a friend telling me that a species of goat in the Jardin des Plantes once ate all the tobacco in his tobacco-pouch! Two years ago some young friends of mine tied their donkey to one of my yew trees, and it ate a few twigs before I could get to move it, and died in less than three hours. In all cases of yew-poisoning that have come to my knowledge the tree was the common yew, *Taxus baccata*.—HENRY REEKS (Thruxton).

GOATS EATING SERPENTS WITH IMPUNITY.—Having had occasion lately to go carefully over the old 'Statistical Account of Scotland,' and extract all therein of interest relating to mammals and birds, I find that goats seem to be proof against snake-bites, according to the reverend author of the "Statistical Account of the Parish of Kirkmichael, in Banff," the Rev. John Grant. I do not find any reference to the fact of goats eating yew trees or yew-tree leaves or berries (*vide anteà*, p. 177). The passage, which occurs in vol. xii. (1794), p. 449, runs thus:—"Goats eat serpents without any injury from their bites. Hence the Gaelic proverb, 'Cleas-na gooiths githeadh na nathrach'—*i. e.*, 'Like the goat eating the serpents.'" If this indeed be the case, it may be worthy of the attention of those who own islands infested with adders, such as some of the islands on our Scotch fresh-water lochs, on some of which I am informed over one hundred "serpents" are sometimes killed in one season.—J. A. HARVIE BROWN (Dunipace House, Larbert, N. B.)

CORRECTION OF AN ERROR.—In my notice of the Beech Martin in Cornwall, in the April number of 'The Zoologist,' p. 127, twentieth line, and the last word of the line, for "lose" read "love."—E. H. RODD (Penzance).

PORPOISES IN THE THAMES.—On the 8th, 9th and 10th of May Porpoises were observed in the Thames, especially below Greenhithe. On the 11th, about half-past six o'clock, several were seen between Waterloo and Charing Cross Bridges, disporting themselves in the river. Two of them were swimming near the Thames Police river-station, Waterloo Pier. They were going with the flood-tide, and frequently rose to the surface of the water for air. Porpoises had not been seen as far as Westminster Bridge for two years past. In May, 1876, one was captured on the Surrey side of Hungerford Bridge, and its carcase was sold and exhibited in the New Cut. Another was shot about the same time near the Cherry Garden Pier, Rotherhithe.—'*The Times*,' 13*th May*.

[Mr. Lionel Tennyson subsequently communicated to 'The Times' the fact that on May 13th he had seen a Porpoise in the Thames immediately below Barnes Bridge.—Ed.]

THE SWANNERY AT ABBOTSBURY.—The perusal of the Rev. A. C. Smith's graphic description of the Swannery at Abbotsbury, in 'The Zoologist' for December last, determined me to take advantage of a visit to Weymouth to inspect this celebrated colony. Mr. Smith's description leaves little to be added, but I may perhaps be permitted to supplement it by a few scraps of information gleaned during my visit and in conversation with the ancient swanherd. I was informed by this authority that the total number of Swans now under his charge is fully 1300, of which he considered that nearly half were engaged in the duties of incubation at the time of my visit (25th April), in addition to some few stragglers which nested elsewhere, and a few late birds whose nests were still empty, but were not likely long to remain so. At the hour of my visit, between four and five in the afternoon, the Swans were on their nests, and the day being brilliant, the sight was a splendid one. On most of the nests the hen swan was sitting, whilst her mate was keeping his proud watch close by; but in a few instances the male bird had left his partner and had gone out into the "fleet" to feed, whilst in other, though I think fewer, cases the hen bird was absent whilst the male remained in charge. The swanherd told me that of about seven hundred cygnets hatched in 1877 very few had been reared except the two hundred brought up under nurses in the manner described by Mr. Smith. These nurses are hen swans which have hatched a brood of their own, to which the cygnets hatched by other mothers are added till the requisite number of twenty—which is considered as many as one nurse can attend to—is completed; but it is needful that the cygnets given her to adopt should be of the same age as her own brood, and that very young, otherwise she would destroy them. The young birds brought up by hand are principally designed for the table, and I can by no means concur in Mr. Smith's view of a cygnet, well fattened and well dressed, being other than a first-rate dish. I was, however, informed that occasionally some of the cygnets thus artificially reared are released, when fully grown, for the purpose of keeping up the stock of old birds. Those cygnets which are left under the care of their parents are, for the most part, lost, as the swanherd told me, from their inability to obtain a sufficient sustenance from the weed growing in the brackish water of the "fleet." This, he said, is now less abundant than in former years and difficult to be reached by very young cygnets, which are, moreover, continually killed in the fights that occur between rival pairs of Swans, and which frequently assume the ignoble phase of slaughtering each other's offspring. An additional cause of destruction is the invasion of foxes, which come from a distance to prey upon the cygnets, though they do not usually attack the old Swans, one of which was, however, killed by a fox during the past winter. Whilst watching the snowy ranks of portly Swans sedately enthroned upon their nests along the marshy borders of the "fleet," I was amused at the contrast exhibited by a flock of about forty nimble Stints, *Tringa alpina*, that, with rapid and agile motions, were exploring its oozy brink close upon the quarters of some of the downy giants; and I was, moreover, surprised at the Stints being absent from their own nesting places so late as the 25th April, but as a smaller flock which flew past me, and of which I had a nearer view, exhibited in its full beauty the rich breeding dress of this charming Sandpiper, I concluded that the good example of the Swans would shortly be followed by their diminutive neighbours. I may add that the Polish Swan appears to be unknown at Abbotsbury, as the swanherd told me that he had never known a white cygnet hatched there.—J. H. GURNEY (Northrepps Hall, Norwich).

THE SPOONBILL IN DORSETSHIRE.—This handsome bird occurs occasionally at Poole. In fact, from my own observations, coupled with the information elicited from old puntsmen and fishermen, it appears that few years pass without a visit from one or more "Spoonbill Cranes," as they are locally termed. I had an opportunity of observing one myself in the early summer of 1876. The first time I distinguished the bird I was engaged in hammering my una-boat against the prevalent sou'-wester, from Poole to Wareham, at a place on the Arne shore called Turner's Ford. A large white bird was standing on the beach, too high on the legs for a gull. It was very wild, and took wing a long way out of gunshot. As it opened its wings I made out what it was, and, having a powerful glass with me, I ran the boat ashore to observe its actions more minutely. It flew rapidly round and round Wareham Bay, occasionally mobbed by gulls. After a somewhat protracted flight, during which greater powers of wing seemed to be displayed than those possessed by the slow-moving Heron, the bird approached the Heron's nesting-place at Arne, which is situated about half a mile from the shore in a clump of fir trees. On these trees a number of Herons were quietly enjoying the pleasant sunshine. Attracted, however, by the unusual appearance of the Spoonbill, they all rose screaming into the air to have a look at the stranger. Apparently satisfied, most of them then returned to their post of observation on the firs. Presently the white bird joined them, pitching upon a tree in their company. This was apparently too great a liberty, for several of the birds immediately flew up and mobbed him, driving him from tree to tree, until, wearied out by their persecution, the poor bird took wing, and, after circling round the heronry for a time, as though loth to quit his unfriendly relations, mounting high in the air, disappeared over the Arne peninsula in the direction of Wych and South Bay, a more retired situation than Wareham Channel. This bird continued to resort to the harbour for a fortnight or more, but owing to the way in which the other birds mobbed him, or to natural wildness, finally departed, experiencing on one occasion a narrow escape from a pound and a half of bullets fired from a huge punt-gun! A more effectual shot at Spoonbills than that, however, was once made here by a gunner named Matthews. He fired his punt-gun at about fifteen of these birds on Patchin's Point and killed no less than five, for which he got, I believe, ten shillings a-piece—a good day's work for him. Another gunner named Orchard shot one, took it home and ate it. He told me that it was a very good bird, only rather too fat. A Spoonbill made its appearance here in June, 1877, the men about Wareham Bay insisting that it was the same bird that had come the year before. I did not happen to see it, but the one I saw was an immature bird with little or no crest. I forget the exact date of Matthews killing the five, but it was a good many years since—a dozen at least I should say. Most of the gunners here are acquainted with this bird, which shows that its appearance is tolerably frequent.—T. M. PIKE (Westport, Wareham).

PLOVER SHOOTING ON THE STIRLINGSHIRE COAST.—There are two ways in which Golden Plover may be shot singly in the low-lying fields adjoining the Firth of Forth, or upon the mud-flats beyond the sea-wall. Both ways afford beautiful shooting—none prettier or more satisfactory. The tide along our coast, on receding, leaves a vast extent of mud-flat, or "slink," as it is locally named. When the tide returns it washes up against the sea-wall in spring-tides, or in neap-tides leaves a strip of greater or lesser width along shore of mud and shells, with, at certain points, patches or corners of salt marsh. About a gun-shot from the sea-wall, and close to the mouth of the River Avon, which separates Stirlingshire from Linlithgow, is a bank of sand and cockle-shells, which is only covered during unusually high tides. For ordinary shore-shooting from this bank the September tides are the most productive. When the tide is at the full, Plovers are frequenting the great open stretches of ploughed "carse-land" which extends for miles in a westerly and northerly direction reaching to Falkirk and Stirling. When the wind is southerly, or south-west, or north-west, they congregate at localities further inland; when easterly or northerly they prefer the fields nearer the sea-wall, although exceptions do occur to the above rule. At this time the shore-shooter must leave the sand-bank and the "slink," and search for his Plovers in the fields; by approaching a flock in a circular manner, not going directly towards them, he may obtain a company-shot for both barrels. These two shots put up other flocks, which wheel about for a considerable time before alighting. If the wind is westerly they often go straight away inland, and do not give another chance; but if easterly they wheel and turn many times before alighting. If the shore-shooter can with any degree of correctness imitate the call of the Plover, while the birds are thus wheeling about, the flock will often fly directly over his head within range, when a beautiful double shot may be had, the first barrel at a single bird as they float piping overhead, the second, as—with the fall of the first bird—the remainder of the flock dash down with tremendous impetuosity. Here is perhaps one of the very neatest shots that can be made. I have often single-handed killed from five to eight couple of Golden Plover, perhaps half of which were shot in this way. But when going specially for Plover, two guns are always better than one; because Plover—if their haunts and flights under different conditions of weather and wind are understood by both gunners—can often be almost driven; and here numerous opportunities are afforded of single shots, as the birds usually fly overhead in open rank. After an hour or two of this shooting, depending upon the time one arrives at the scene of operations, a return should be made to the sea-wall or to the sand-bank, or positions be taken up a little inland, opposite certain land-marks on the sea-wall, known to the local shore-shooters, and the shelter of a "stook" of wheat or beans sought for. Presently as the tide begins to leave about a hundred yards of mud-flat uncovered, a few Golden Plover—perhaps in twos and threes or small flocks—are seen skimming along close to the tide line, and all flying in the same direction; if the wind is northerly, flying north, towards the broad mud-flats which lie at the back of the long breakwater at Grangemouth; if southerly, flying south to the semicircular bay which lies between Avonmouth and Bo'ness. These small "trips" of Plover are the first to leave the fields, and have crossed the sea-wall at various points, some of which points must be known to the shore-shooter if he expects to have any shooting. If standing inland behind a wheat "stook" the shots one gets are somewhat similar to those obtained when the birds are frequenting the ploughed fields. They pass often just within long shot overhead, and a second barrel may sometimes be obtained as they dive downwards. If, however, the gun be stationed *at* the sea-wall the shots obtained are different, as the Plover upon approaching the sea-wall dash down and skim low over, at certain points, especially when a strong breeze is blowing off the east. It requires a sharp shot to get more than one bird at this station, and often before your single bird drops, the rest of the flock are out of shot, skimming away over the mud-flats. If, again, a gun be stationed upon the shell-bank,—hid, we will suppose, by an old tree-root washed down the Avon or the Forth and stranded, or even simply seated on a shell-heap,—opportunities again occur of a double shot, as you see the Plover coming, but to kill a double here is also quick practice. On fine calm weather Plover, however, often come across the sea-wall at a great height, and do not lower until almost over the tide-mark, or at all events a good 100 or 150 yards beyond the shell-bank. At such times the shooting is seldom good, and the only plan is to get out upon the mud as far as possible, and keep a sharp look out for stray shots. Plover after their dive down over the sea-wall often separate and scatter over the mud, uniting their forces again as they approach the edge of the water. These scattered birds usually fly with great velocity, and sometimes twist and turn almost like Snipe. It seems, indeed, as if the very impetuosity of their headlong dive across the sea-wall had deprived them of the power of re-directing their flight, and as if the twists and turns were made in the effort to steady it again. Here is an opportunity for another kind of shot, and a very pretty one it is, too. Altogether, at least upon our coast, there is abundant diversity of shots at single birds to be had, and often, with or without a second gun, five or six couples may be bagged, and sometimes more, if one hits off just the right tides—just the right wind and weather. There is comparatively little written, I think, upon this part of the shore-shooter's experiences. It has always seemed to me to be of first importance for a successful day's Plover or shore-shooting, to have—*first*, the wind right; *second*, the tide right; and, *third*, the weather not with too much rain, or *vice versâ*, and with, later in the year, a certain amount of frost. If to this be added mist off the sea, keeping the birds from straying far inland, good sport may be looked for; but in misty weather birds "bunch up" more than they do in clear weather, as a rule.—J. A. Harvie Brown (Dunipace House, Larbert, N.B.).

The Nesting Habits of the Water Ouzel.—The Water Ouzel, or, as it is more commonly called, the Dipper, is very frequently met with in the English Lake District, as also in many other parts of England, Scotland and Wales. It loves wild hilly districts, and especially rapid rivers fed by mountain streams. Here, amid the rocks and waterfalls, it may be observed, now flying, or rather darting, up or down the stream, and in its manner of flight resembling the Kingfisher and Sandpiper; anon sitting on a stone or rock in mid-stream, or, if in search of food, walking at the bottom of the stream in search of water beetles and other insects. It is a shy bird, and from its rapid movements very likely to elude observation. There can be no mistaking it, however, for any other species; its white breast, brownish black back, short tail, and feet so admirably adapted for walking on stones, cannot fail to distinguish it. Water Ouzels are early breeders; one year I saw no less than eight nests in the neighbourhood of Windermere; they were all built in April, and

I have known the eggs taken by the 9th of that month. They have three or four very favourite places for nesting in. By a waterfall, when the nest, which is large, bulky, and roofed over like a Wren's, is placed in a crevice of the rocks or stones, and though easily seen, generally very inaccessible; in a culvert or tunnel, when it is placed in a hole in the wall or roof; under a bridge, in a hole of the arch, and often near the water; and under an overhanging bank, when, from its position and build, it much resembles that of the Common Wren. It is generally composed of moss and leaves outside, and lined with finer material in the shape of bents and grass; the roof generally overhangs the entrance, which is difficult to see unless you stoop down. The nest is large and bulky; the eggs five, six, and sometimes seven in number, white and pointed. When built by a waterfall the bird seems soon aware of your approach, and is very likely gone before you can catch sight of her. When built in a culvert or tunnel, which I have found the favourite place, they will sit very closely. I remember noticing a pair of these birds flying about a rather large drain, about four feet high and four wide, which conveyed a small streamlet under a road into the river. Feeling sure the nest must be in this drain, I asked a friend who was with me to search. He did so, but in vain. On returning some hours afterwards to the same spot there was the bird again; so nothing remained but to have another search. In I went, and crawling up the small tunnel on hands and knees, I groped about in the side-walls, but without success; at length, putting my hand up to the roof, which was made by large pieces of slate laid across, I discovered a crevice between two slates, into which I could just squeeze my fingers, and there sure enough was the nest with three eggs in it. My brother came the following year to look, and there was a nest in the same place with the old bird in it. He caught her, and let her go; there were two eggs, which he left in the nest. Coming some days after, and feeling sure she would forsake her nest, he was surprised, on getting to the nest, to observe the bird fly off, and, apparently not at all alarmed, settle within two yards of him on a stone. The nest contained five eggs, which were allowed to hatch. I doubt not that the same birds or their descendants occupy the same snug and secure home every season, and rear one or perhaps two broods undisturbed. The flight of these birds is rapid and generally near the water. I have seen them, in August, get up from very small mountain streams on the moors in Scotland. They have a short, melodious and rather powerful song. Their cry of alarm is a short, shrill pipe, rather like that of the Kingfisher's. I never saw one settle on a tree or land, but generally on stones and rocks in the river.—HENRY GEORGE TOMLINSON (The Woodlands, Burton-on-Trent).

NESTING HABITS OF THE KINGFISHER.—Mr. Tomlinson is very accurate in his account of the breeding habits of this bird. They are, as he observes, early nesters; last year I saw a nest with seven eggs in on May 1st, and this year on the 25th April I found another with the like number. I have usually found the nest three or four feet above the water, in a hole some eighteen to twenty-four inches in depth, invariably sloping upwards. The eggs are, I believe, always seven in number, and are deposited in a hollow at the end of the burrow, upon a quantity of ejected fish-bones, somewhat like isinglass. A small number of fish-bones will probably be found outside the hole, and very often the droppings of the old birds will be seen on the ground underneath a friendly perch. I have noticed that the hen bird sits very closely, and I have nearly always found her on the eggs when my hand reached the end of the hole. The nest I found on the 25th April last was situated in a bare bank, about four feet above the water, in a swift brook running through a "spinney." Some ivy hung over the bank and slightly concealed the nest. Just beside it, in a straight line with it, were three other Kingfishers' holes, all of which have, to my certain knowledge, been inhabited in past years. On enlarging the aperture I was surprised to find that the base of the burrow all the way up was thick with "mutings," and I at once concluded that the young had been hatched. However, on getting to the end, about eighteen inches, I felt the old bird. I pulled her out, smoothed her ruffled feathers, and let her fly. Upon nearly two handfuls of fish-bones were seven eggs, nearly round, and with a beautiful salmon-hue, the yelk showing through the thin shell. I never before knew the hole to be dirty before the young were hatched. Kingfishers could not, I imagine, construct a nest of entwined fish-bones; for the bones of "miller's-thumbs" and minnows, interlaced Magpie-fashion, would scarcely form a habitation large enough for the parent bird to sit on her eggs, let alone the space needed to contain seven young ones.—C. Matthew Prior (Bedford).

Occurrence of the Little Crake in Cornwall.—On March 21st I had the pleasure of examining, in the shop of a birdstuffer at Stonehouse, a specimen of the Little Crake, *Crex pusilla*, which had been captured a few days previously by a cat at St. Dominick, Cornwall. The person to whom it belonged stated that it was brought into the house by his cat, and seeing the bird was a stranger,—being well acquainted with the Corn Crake and Water Rail,—he took it away from the animal and brought it to Stonehouse to have it preserved and learn its proper name. This, however, the birdstuffer could not exactly tell him, never having seen a specimen of the kind before; but, happening to call in just at the time, I was able to decide the question. This example is fully as large, if not larger, than *Crex Baillonii*, and the few measurements I took of it are as follow:—Bill, from point to forehead, above three-quarters of an inch; wing, from carpal joint to end of longest quill, four inches, full—first quill equal to the sixth; tarsus, one inch and three-eighths; middle toe and its claw, one inch and five-eighths. The extreme length of the bird could not well be taken, as the tail had been pulled out. Colour:—Bill, greenish yellow; base of upper mandible darker; legs, green; top of the head, dark olive-brown; back of neck lighter; centre of back, black, the edges and tips of many of the feathers being marked with stripes, rather than spots, of white; scapulars and wing-coverts, plain olive-brown; chin and throat, dull white; breast and sides, olivaceous buff, without a shade of slate-grey; vent and under tail-coverts, dusky brown, slightly barred and spotted with dull white. Although at least three examples of *Crex Baillonii* have been obtained in Cornwall, the above is the first recorded instance of the capture of *Crex pusilla* in that county.—JOHN GATCOMBE (Stonehouse, Devon).

[In Mr. Rodd's 'List of Cornish Birds,' 2nd ed., 1869, it is stated that Mr. Drew, naturalist, late of Plymouth, had a specimen of the Little Crake, which he said he had received from that neighbourhood. His surmise that the species would turn up some day in Cornwall has now been verified.—ED.]

FORMER NESTING OF THE KITE IN LONDON.—It has been stated that Kites used formerly to breed in London. In the Report of the Select Committee of the House of Commons on Wild Birds Protection will be found this statement by one of the witnesses examined (Appendix, p. 169):—"I have seen in old London newspapers references to taking Kites' nests in Hyde Park, and it used to breed in the clumps of trees at Gray's Inn, and other places in London, between one and two centuries ago." I shall be much obliged to any correspondent who will enable me to verify this statement by referring me to any published accounts on this subject.—J. E. HARTING.

WOOD PIGEONS NESTING NEAR A HOUSE.—I do not think the nesting of the Wood Pigeon, *Columba palumbus*, near a house is an uncommon occurrence. During the few years of my residence near Pershore, in Worcestershire, a pair of these birds nested every season in a deodar, within ten yards of my front door, the branches of which were touched by every carriage that came to the door. On one occasion the nest was not more than seven feet from the ground, and I used to go nearly every morning and pull down the branch to see how the young birds were getting on.—WILLIAM H. HEATON (Meadow Croft, Reigate).

AUTUMN AND WINTER MIGRANTS.—From observations which I have made in this district during the past winter I can fully confirm Mr. Cordeaux's remarks (p. 102), as to the scarcity, if not total absence, of the Common Snipe and Jack Snipe. In fact, the disorder among our autumn migrants seems to have been general. I have not seen or heard of a single Woodcock. Fieldfares and Redwings arrived here in countless numbers about the fourth week in October, and after staying a few weeks they disappeared, nor have I seen—with the exception of a flock of Redwings which appeared on the 26th December—a single example of either species since. There has been scarcely any migratory movement among our partial migrants, yet it is certain we received a large immigration of Rooks up to the end of autumn. Hen Chaffinches, as usual, migrated, returning, however, about the end of February Starlings have been more or less in flocks all the winter. When collecting cocoons of *Saturnia Carpini* on the moors, I was surprised at the number of Wrens I met with till the end of December. They must have found a scanty subsistence; I had a chase after one of them, and I would strongly recommend it to those whose habits of life are of a sedentary character, as I can testify to its beneficial effects in calling the dormant muscles into action. Vast flocks of Mealy Redpolls have visited our birch copses this winter. I saw them many times in December, but took them to be Lesser Redpolls. On the 4th February I saw two which had been shot out of the flock, and identified them as Mealy Redpolls. Their superior size, the comparatively light-coloured rump, and the relative length of the fourth primary, are features which sufficiently differentiate them from the commoner species. I first saw the Pied Wagtail on the 24th February. A person brought me a Stonechat which had been shot on the 5th March. Probably this was not a migrant. Wheatears were somewhat late in their arrival. This might have been owing to the cold weather which set in on the 21st March. They did not arrive here until the 6th April.—E. P. P. BUTTERFIELD (Wilsden).

SPRING MIGRATION OF BIRDS.—I expressed my conviction (p. 30) that Mr. Cordeaux was wrong in stating that the song of the Willow Wrens was dependent upon, and consequently not heard until, the arrival of the females, which succeed the males, Mr. Cordeaux thinks, a few days. I believe, providing the weather is warm and their insect-food abundant, we hear their song immediately after their arrival. This has been undoubtedly the case this year. It seems to be less capricious in its time of arrival, and not so susceptible to atmospheric influences, as most of our summer migrants. The date on which it made its appearance in 1876 was the 14th April, although a bitterly north-east wind prevailed. In 1877, on the 12th, which was also a most cold and backward spring. During the present year the wind was west, temperature warm. I heard a Ring Ouzel on the 14th April; and an ornithological friend told me he had both seen and heard it on this date. Probably it had been absent for a few days, as a gamekeeper told me that he and a friend had seen one on the 6th. On the evening of the 17th April I saw a flock of Fieldfares—for the first time since their arrival in November—flying in a northerly direction, and evidently migrating. This total absence of the Fieldfare here during the winter is quite exceptional, if not unique, in my ornithological experience. I saw a Redstart on April 17th, and about a dozen Sand Martins on the 18th; and my brother saw a Swallow on the last-mentioned date. Two male Tree Pipits were observed, both singing, on the 19th April, and a Yellow Wagtail on the 21st. All the above-mentioned migrants, excepting the Swallow, are now (April 21st) generally distributed in suitable localities. The wind has veered into the east, and we are beginning to experience the truth of the old proverb, "One Swallow doth not make a summer."—E. P. P. BUTTERFIELD (Wilsden).

SUMMER MIGRANTS NEAR DUBLIN.—I forward to you the following list of summer migrants, with dates of arrival, as observed by members of our Field Club:—Wheatear, March 24th; Swallow, April 8th; Chiffchaff, 9th; Willow Warbler, 11th; Cuckoo, 16th; Swift and Corn Crake, 17th; Whitethroat, 18th; Sand Martin, 22nd; Flycatcher, May 12th.—C. W. HENSON (Rathmines School, Dublin).

ORNITHOLOGICAL NOTES FROM THE SEA OF MARMORA.—In a letter from my brother, Lieut. Gervase Mathew, R.N., dated on board H.M.S. 'Cygnet,' off Bulair Lines in the Sea of Marmora, on the 14th May last, are several ornithological notes which I think will be interesting to readers of 'The Zoologist,' and I accordingly forward them for publication. He says:—"During our passage from Malta to Besika Bay a number of birds, migrants, flew on board the ship—Swallows, Turtle Doves, Grey-headed Wagtails, &c. One of the first birds I noticed was a Little Bittern; it flew on board and settled in one of the big boats we were bringing out. I crept up alongside the boat, then suddenly jumped up and caught the bird as it flew up. It was a beautiful creature; I skinned it, and it proved to be a female. One day a violent thunder-storm broke over us and the rain came down very heavily and lasted for several hours. In about half an hour from the time it commenced the ship was crowded with birds, the greater number being Grey-headed Wagtails (of which there must have been several hundreds), Turtle Doves, Swallows, Whinchats, Titlarks, Cuckoo (one), Short-toed Lark (one), Striated Bunting, &c. In Besika Bay and up the Dardenelles there were many hundreds of Shearwaters; they are continually on the move, flying backwards and forwards, and the Turks say they are the spirits of the departed. They seem to be darker birds than our English Shearwater. The commonest gull about Gallipoli is the little black-headed Adriatic Gull, a very pretty bird with intense black head and bright coral red legs and beak. Its note is very different from that of *Larus ridibundus*, and it is, I fancy, a trifle larger. Herring, Lesser Black-backed and Common Gulls are plentiful. The Herring Gull has bright *yellow* legs: this, as far as I can remember, is different from our bird. The Lesser Black-backed Gull also seems different. There are no Rooks in these parts, but their place seems taken by Storks, who are very tame, and may be seen following the plough and walking sedately about the fields and gardens looking for food: the females are now sitting on their huge nests placed on top of a chimney, the domes of the mosques, or any convenient corner on a roof. On the 7th I went across to a place called Tcherdak, on the Asiatic side, opposite Gallipoli, to try for Quail. We got six brace and a half, and some Calandra Larks, which are fine big fellows and very good in a pie. There were numbers of Bee-eaters flying about, and their brilliant plumage looked beautiful in the bright sun. They hawk about for flies something like Swallows, and keep up a monotonous croaking the whole time. I must have Bree's 'Birds of Europe' sent out to me, for I feel the want of this work. There are several birds about here I cannot make out. One of the prettiest is a Bunting with black head, yellow throat, breast and belly, and reddish back. I remember the figure very well, but forget the name of the bird. I have skinned one specimen. The female is not nearly so brightly coloured. Calandra, Crested and Short-toed Larks are common, as is one very pretty Wheatear (not *Saxicola œnanthe*) and several Warblers, Buntings, Pipits, &c., whose species I am not certain of. Little Kestrels are very common and tame, breeding among old tumble-down houses in the village of Bulair; as also are two kinds of Shrike I am not certain of, Buzzards, Hen Harriers, Magpies, Crows, Ravens and Royston Crows feeding on carrion; on the beach Little Ringed Plovers, Common Sandpipers and Little Terns (the former and latter evidently breeding); in a marsh, Black Terns (breeding), Snipe, &c., and at the report of my gun two black and white Geese rose from the rushes. They were rather fat; their wings seemed to be black and most of their bodies white, and I fancy their heads black. I cannot make them out. Near this marsh I came upon a lot of Pratincoles hawking about for flies, and was much interested in watching them. They were ridiculously tame and pitched within twenty yards of me, and when flying often came within a few feet. On the ground they do not move much, but on the wing they are very graceful, flying and twisting about in an elegant manner after flies. I shot three of them, but was sorry to do so, they were such pretty innocent-looking creatures. The base of each mandible is *bright vermilion;* I do not remember this in any plate, so perhaps it may fade after death. Unfortunately my shot was too large, and I only managed to make one decent skin. The bird's crop was full of small beetles, mostly Brachelytra. Tell me, when next you write, where to look for their nests, for I fancy they may breed here. This is not much of a place for butterflies: there is hardly a tree in the country—all grass and a few stunted bushes. The only species not British I have taken are *Anthocharis belemia* and *Syrichthus laverteræ*. Larvæ of *P. cratægi*, *B. neustria*, *D. cæruleocephala*, *E. lanestris*, and an unknown 'egger,' are very numerous, and I daresay a few 'blues' and grass-feeding *Satyridæ* will turn up later on. The weather here is very unsettled; one day it is bright and hot, with scarcely any wind, and the thermometer up to 70°, and the next day it is cloudy, cold, and blowing, with thermometer down to 55°. I have written to my agents to send me out a breech-loading walking-stick gun, with dust-shot and cartridges, as I should like to skin a few of these small birds while they are in their summer plumage; but this is a tiny den of a place; it is most difficult to do anything, or to stow away things."—MURRAY A. MATHEW (The Vicarage, Bishop's Lydeard, near Taunton).

AN OLD LIST OF LINCOLNSHIRE BIRDS.—When amusing myself not long since in the British Museum Reading Room, I took down from one of the shelves a volume entitled '*Notitiæ Ludæ;* or, Notices of Louth.' It was published anonymously in 1834, and I have no idea who was the author. At page 283 is a list of the birds of the district, prefaced by this remark:—"I observe no other order than that by which I became acquainted with them. Game and such birds as are common I omit; nor is it pretended that I have become acquainted with all the birds which may be seen in the neighbourhood." Amongst the species named are the following:—Long-legged Plover, Crane, Soland Goose, Hoopoe (rare), Egret, Avoset, Gaubet [*quære* Gambet, *i.e.* Redshank], Dotterel (plentiful), Spoonbill, Black Wren [*quære* Black Tern], Shrimp-catcher or Shoveller, Poppinjay [?], Stork (three times in ten years), Ospray, Ptarmigan [! ?], Sarcelle (rare) [!]. This book having been privately printed is probably not well known to ornithologists, and for this reason, no doubt, escaped the notice of my friend the author of 'The Birds of the Humber District.' It is to be regretted that the writer "omitted such birds as are common," for it is always interesting to compare the former zoological aspect of a district with its present fauna; and birds that may have been common enough in the neighbourhood of Louth forty-four years ago may be rare, or even unknown there at the present time. With regard to some of the names above given one can only speculate as to the species intended. For example, it is by no means clear what birds are referred to under the names "Poppinjay," "Ptarmigan," and "Sarcelle." The "Poppinjay," I believe, is generally identified with a Parrot of some kind, and in Heraldry is always so represented; but the author of '*Notitiæ Ludæ*' may have bestowed this name on the Jay, possibly under the impression that the name Jay is an abbreviation. Were I not writing these lines away from home and all my books and papers, I might be able to refer to a memorandum of having somewhere read a description or allusion to the Poppinjay which pointed to its identity with the Green Woodpecker. Possibly this may be the bird referred to in the list in question. As the author expressly states that he omits "such birds as are common," it is doubtful whether he would intend to include the Jay. With regard to the "Ptarmigan," there must be some mistake, for it is impossible to suppose that this rock-loving species, this bird of the mist and mountain, was ever met with in haunts so uncongenial to its habits as the flats and fens of Lincolnshire. The word "Sarcelle," as every naturalist knows, is the French name for our familiar little Teal; and yet if this be the bird referred to by the writer of '*Notitia Ludæ*,' it is strange that he should have called it "rare" in Lincolnshire, where, at the date at which he wrote, it must have been one of the commonest of all waterfowl, being annually taken in decoys by hundreds, not to say thousands. Should the author be still living, and read these lines, he would confer a favour by affording some explanation.—J. E. HARTING.

MANX SHEARWATER IN OXFORDSHIRE AND NORTHAMPTONSHIRE.—I recorded, at p. 135, the fact of some Manx Shearwaters having been captured alive in Oxfordshire. I am now able to add two more to the list. Mr. H. Norris, of Swalcliffe Park, near Banbury, writes me:—"As to the Manx Shearwater in my possession, I beg to say it was caught by some workmen returning home one evening in September, 1877, by the brook-side at Framington, near here. I sent it to Spicer at Leamington to be stuffed, and he informed me that it was an adult bird. I tried for two days, with fish and raw meat, to keep it alive, but it would eat nothing. I then turned it into the garden, hoping it might, like the Plovers, take to worms and slugs. There is a finer specimen than mine at a tenant's house near Chacombe, in Northamptonshire, which was caught near there."—C. MATTHEW PRIOR (Bedford).

THE BLACKCAP IN SCOTLAND IN WINTER.—At a recent meeting of the Natural History Society of Glasgow, the Secretary read the following note on the occurrence of the Blackcap Warbler, *Sylvia atricapilla*, in Scotland during winter, by Mr. Robert Gray, F.R.S.E., hon. member:—"In 1862, Mr. Osborne recorded, in the 'Proceedings of the Royal Physical Society of Edinburgh,' that he had shot two specimens of this warbler in Caithness in the month of October. The announcement gave rise at the time to an expression of considerable doubt on the part of one of the London critics, who indeed did not hesitate to say that Mr. Osborne had made a mistake. Not long afterwards, however, other specimens having been met with even later in the season and in the same county, his suspicions were allayed by the production of the birds themselves, and the fact was thereafter made known, through one of the London magazines, that Blackcap Warblers could not only survive the rigours of our Scottish climate in Caithness, but that they could keep themselves in good condition by feeding entirely upon fruits. Since Mr. Osborne's observations were published I have taken every favourable opportunity of watching the habits of what may now with propriety be called our fruit-eating warblers (for there are others besides the Blackcap), and I find that towards the close of autumn as insects become scarce, or perhaps indeed through preference, those birds betake themselves to the glens and gullies, where they greedily devour quantities of the berries of the mountain ash and other fruits. Later in the season the birds come nearer towns and villages, and are then seen frequenting gardens and orchards, picking up what they can find. The specimen which I now exhibit was observed by one of the boys at Merchiston School, near Edinburgh, on the 5th January, and brought down by a stone from a catapult, in the use of which these boys are certainly proficient, however much they may be behind in other attainments." Mr. Gray has presented the specimen to the Hunterian Museum.

Food of the Long-tailed Duck.—At a recent meeting of the Natural History Society of Glasgow, Mr. David Robertson, jun., read some notes on the food of the Long-tailed Duck (*Harelda glacialis*, Linn.). After some general remarks he stated that the Long-tailed Duck was purely a sea-bird, never being seen on land except during the breeding season. It feeds exclusively on shells, which it obtains beyond tide-mark, diving to the depth of twenty to eighty feet, and remaining under water for a considerable time picking up the small shell-fish attached to the sea-weeds and stones at the bottom. In the crop of one shot in Skye he had found a large number of shells, two of which he was unacquainted with, and having sent these to Dr. Gwyn Jeffreys for examination he had identified them as *Cyclope neritea*, a Mediterranean species not known to Britain. One of the specimens was a young one, but Dr. Gwyn Jeffreys was able to determine that they were both of one species, although hitherto they had been considered as distinct. This bird must have picked up these shells either in the Mediterranean, where, however, it is seldom seen, and flown direct to Skye, and there been immediately shot, or what is more likely, as the shells had not undergone any trituration in the gizzard, it had found them near the spot where it was killed. *Harelda glacialis* will thus have the credit of first bringing to light the fact of *Cyclope neritea* being entitled to a place in the British fauna.

The Capercaillie in Scotland.—At a meeting of the Natural History Society of Glasgow, held on the 30th April last, a paper was read entitled "A Chapter in the History of the Capercaillie in Scotland, being Preliminary Notes on Damage done to Pine Forests," by Mr. John A. Harvie Brown. The writer treated the subject at considerable length as regards the Capercaillie, and also referred to the damage done to pines from the ravages of a beetle, of a nature to create quite a sensation in the Crieff district. He showed specimens of the beetle in a living state, and also of the fir shoots and bark, which gave decided evidence of their destructive habits. Mr. Peter Cameron made some remarks on the specimens.

Provincial Names of British Birds, &c.—The western nomenclature is peculiarly characteristic. All the names in the following list are in common, I might say exclusive, use in the south-eastern part of Cornwall, which is the district I am best acquainted with, and many, if not all, are general in all the country lying west of the Vale of the Exe. The spelling is of course my own, but I think it may be taken to represent the sound pretty correctly. By the way, has it struck any philologist that names of animals, particularly of birds, whose names are under the protection of the rising and birdnesting generation, are more likely to be handed down correctly than perhaps any other words. Is not this worth the attention of the Anthropological Society? In giving the common English name in the following list I have, as to birds, followed Yarrell:—

Mistle Thrush	Holm-screech
Blue Titmouse	Hackey-mawl
Yellowhammer	Gladdie
Chaffinch	Copperfinch
Greenfinch	Green Linnet
Bullfinch	Hoop
Wren	Ranney
Water Rail	Gutter-cock
Wagtail	Dish-washer
Nightjar	Night Crow
Heron	Hern
Woodpecker	Hood-awl
Peewit	Horney-wink
Common Snake	Long-cripple
Mole	Want
Worm	Angletwitch
Hedgehog	Hadgey-boar
Bat	Airey-mouse
Wasp	Apple-drane
Humble-bee	Drumble-drane
Shrew Mouse	Screw
Weasel	Cane

The name for the Peewit is more local than perhaps any of the others. I do not recollect having heard it out of Cornwall. In that for the Woodpecker "Hood" is the western pronunciation of "Wood"; as, for example, "Hoodcock" for Woodcock, "Hood Dove" for Wood Dove, &c.—G. G. LITTLE.

[We shall be very glad to receive other provincial lists from any correspondents who may be disposed to forward them.—ED.]

DESTRUCTION OF SHELL-FISH BY SEA-BIRDS. — At an inquiry held recently by Messrs. Buckland and Walpole into the condition of the sea-fisheries of Morecambe Bay and the estuary of the Duddon, a good deal of attention was directed to the alleged diminution in the supply of shell-fish, especially cockles, in the locality. At the Furness Abbey inquiry the importance of this branch of the subject was set forth at the outset of the proceedings by Sir James Ramsden, Managing Director of the Furness Railway, whose evidence showed that, exclusive of local consumption, no less than 2254 tons of cockles, valued at £11,270, were carried over a portion of the line during 1877. A letter was also read which stated on good authority that more than £10,000 worth of cockles had been gathered in a year on Kent's Bank alone. The bulk of the evidence tended to prove that, in the same way as is the case with the flat-fish, cockles and mussels are annually decreasing in numbers, and the seafaring witnesses seemed unanimous in attributing this decrease, amongst other causes, to the depredations of sea-birds, which are said to have multiplied exceedingly since the passing of the Act for their protection in 1869. As this charge is a very serious one, as far as the birds are concerned, and may possibly lead to some alterations in the laws for their protection, perhaps I may be excused from offering a few remarks with a view to inducing others to state their views on the subject. That sea-birds do eat cockles (to which, as being the most valuable of the different varieties of shell-fish alluded to in the inquiry, I shall confine my remarks) is proved beyond shadow of doubt, and we can readily believe that their consumption is very great. According to the reports in the local papers, gulls alone were referred to as the offenders, Herring Gulls and Black-backs being specially alluded to. The Black-headed Gull, which breeds in countless thousands at various spots in the neighbourhood of Morecambe Bay, was not, as a rule, included amongst the accused, though one witness asserted that this species is in the habit of carrying the cockles into the air, and dropping them on a stone, in order to get at their contents (the larger species are said to swallow them whole). But it must be evident to anyone who has taken an interest in the subject, that the gulls are by no means the worst offenders. Oystercatchers, enormous flocks of which frequent the sands throughout the year and breed in large numbers on the coast, live entirely on shell-fish, and it is quite possible that cockles, at any rate when they are only as large as small peas, form a large proportion of the food of the numerous waders, from the

Curlew down to the Dunlin,* which abound in this locality. Next to man, however, I am inclined to think that the Scoter, or Black Duck, is the worst enemy with which the cockle has to contend. A short time ago two of these birds were sent to me which had been shot in the neighbourhood of Grange, at the head of Morecambe Bay. I had the curiosity to examine the contents of their gizzards, and was surprised to find that they were both crammed with the shells of cockles, to the exclusion, apparently, of any other kind of food. Several of the shells were still entire, and measured half an inch in diameter. The rest, some of which had evidently been of much larger dimensions, had been broken up by the grinding process they had undergone. There could not have been less than the remains of a dozen cockles in each of the specimens I examined, and, supposing that a Scoter would eat from twenty to thirty in a day, a flock containing a thousand of these birds would devour in the course of a season (allowing due time for their absence at their breeding stations) not less than seven million cockles, amounting in weight to at least sixty tons. And yet a flock of a thousand Scoters does not represent a tithe of what may be seen in the bay at any time during the winter months. The mode in which these ducks procure their food is peculiar, and until I found it out I was at a loss to understand why they might so frequently be seen swimming in the shallow water at a distance of from fifty to a few hundred yards from the water's edge. As the rising tide covers the banks, the sand, for the depth of an inch or two, is gradually stirred up until it becomes a semi-liquid mass. The cockles, which, unlike mussels, are not attached to any foreign substance, lie at about this depth below the surface, and the ducks, swimming up on the advancing flood find no difficulty in diving or reaching down and extracting them from their sandy bed. The same tidal action tends, doubtless, to disperse the spat given off by the parent cockle during the breeding season, and explains how they are able to move (whether of their own free will or not I am unable to say) from place to place. No doubt, too, it is in this way that the shell-fish which live beneath the sand obtain their food—a fact which finds support in the evidence of one of the witnesses, who alluded to the mortality produced among the cockles by severe frosts. Thus far the case against the birds appears as black as possible; but, on the other hand, we are met by the unanswerable argument that thirty years ago the birds were ten times as numerous as they are at present; and yet, according to the evidence of the opponents of sea-birds, the shell-fish were also far more plentiful than is now the case. These are facts which it is hard to reconcile, and we must be content to suppose that in those days there was room enough for the birds, the cockles, and their human enemies to live without the weaker species being in danger of extermination, and the balance of nature was evenly kept up. As soon, however, as—owing to the opening of the iron mines, the extension of the railway system, and the rising up of large towns, such as Barrow, in the neighbourhood—the population began to grow abnormally, and, at the same time, the demand for every sort of food in the manufacturing districts to increase enormously, the balance was upset, and the day, though still distant, can be seen approaching, when the humble cockle will be as rare as the oyster, and, if preserved at all, will have to be cultivated in the same way as that animal is at present. Whatever may be said of the sea-birds, I believe it is simply the old story of the demand exceeding the supply which must account for the diminution in the number of British shell-fish.—W. Arthur Durnford (Barrow-in-Furness).

---

* We have often found cockles, sometimes of large size, in the stomach of the Curlew, but never in that of the Dunlin.—Ed.

Exuviation of Lobsters.—In 'The Field' of May 25th, Mr. W. A. Lloyd, of the Crystal Palace Aquarium, has an interesting article with this heading, in which he points out that the notion which prevailed formerly (that is before the establishment of public Aquaria afforded such facilities for the study of *Crustacea*) as to the mode in which lobsters annually cast their shells, is erroneous, and he very clearly describes the curious process from his own observation. The article, which occupies two columns in 'The Field,' is too long to be quoted *in extenso*, but we feel sure that the following extract, which contains the pith of Mr. Lloyd's remarks, will be read with interest by all who have not already perused it in the columns of our contemporary:—"What takes place," says Mr. Lloyd, "is this: the lobster, feeling the time of exuviation approach—which in aquaria may be any time of the year—seeks a retreat where it may be safe during the period of soft helplessness, which lasts for three or four days after exuviation; usually selects it below some overhanging rock, and if there is protection on each side so much the better. If there is a good deep bed of sand and shingle, as there should be, six or eight inches thick, the lobster proceeds to excavate this away behind, and with its anterior limbs pushes it up in front, and makes a kind of defensive earthwork. In this it is aided by an occasional fanning motion of its false feet in driving away a current of sand outwards, below its tail, the head being then turned inwards, towards the hinder part of the snug little cave thus formed, into which the lobster never allows any other creature to enter, not even a gentle little shade-loving fish, like *Motella*. When the moment arrives for casting the shell, the lobster falls over on its side, a rupture is made in the membrane uniting the posterior of the cephalo-thorax with the anterior ring of the abdomen, and presently a part of the lobster's new coat may be seen between these two. The rent is made by the lobster suddenly and strongly bending its tail inwardly towards its head. In a few minutes the whole of the tail or abdomen is outside of the old shell, and the two may be seen side by side. Then the exuviation of the front half of the lobster goes on, all at once, legs and head-appendages and body together, and the last portions but one seen of the creature in its fresh covering are the tips of the large anterior limbs, which, as I have said before, are for a few minutes a little misshapen. Last of all appear the longer tentacles. During this process, which from first to last takes up about a quarter of an hour, the lower edges of the cephalo-thorax become a little separated from each other, laterally, to the extent of about one inch in a large specimen, and this appears to be for the purpose of allowing more room below than would otherwise be possible for the extrication of the limbs. To this end, therefore, and in my opinion for no other, does the straight longitudinal furrow, and its membrane below, constitute a kind of hinge or joint. As soon as the old shell is quite detached, and the animal is in its normal position, and has rested for a few minutes, it pushes the cast shell over the edge of the earthwork of sand and shingle, outside the den. Sometimes the lobster buries its old coat; but in any case this rough usage of it has a tendency to break the very tender membrane at the hinge, and usually it is found torn, and the cephalo-thorax in two. But when an observer, quickly after exuviation, very carefully removes it out of the water, it will be found quite whole, and if the shell be immediately set-up on a board it *may* dry without separation; but usually even then it begins to split, unless such splitting be arrested by gumming narrow strips of thin paper outside, across the joint, at intervals. However, I think I have said enough to show that no part whatever of the lobster is necessarily ruptured, save the membrane transversely where the cephalo-thorax and abdomen join, and that absolutely *the whole* of the interior animal comes out through the orifice thus formed; also that no breakage or splitting of the shell occurs anywhere else, the longitudinal split of the upper fore-part of the shell being merely an after-accident. After solidification, in three or four days, or within one week, the shell or animal never increases till the next exuviation."

TRUFFLES.—Most people are familiar with the appearance and taste of truffles, but few probably know anything about their organisation and reproduction. The subject is a very curious one; and although more suited perhaps to a botanical journal, it may be discussed not inappropriately in a magazine of Natural History. A French writer says ('Revue Encycl.' xxxv. 794):—"The truffle, *Tuber cibarium*, is a vegetable entirely destitute of leafy appendages and of roots; it is nothing more than a rounded subterraneous mass, absorbing nourishment upon every point of its surface, the reproduction of which is dependent upon bodies generated within its substance. The truffle is composed of globular vesicles, destined for the reproduction of the vegetable, and short and barren filaments, called by the French botanist, M. Turpin, *tigellules*. The whole forms a substance at first white, but which becomes brown by age, with the exception of particular white veins. This change of colour is dependent upon the presence of the reproductive bodies, or *trufinelles*. Each globular vesicle is fitted to give birth, in its internal surface, to a multitude of these reproductive bodies; but there are only a few of them which perfect the young vegetable. These dilate considerably, and produce internally other smaller vesicles, of which two, three, or four increase in size, become brown, are beset with small points on their exterior surface, and fill the interior of the larger vesicles. The small masses thus formed are the *trufinelles*, and become truffles after the death of their parent. Thus the brown parts of the truffle are those which contain the *trufinelles;* and the interposed white veins are the parts which are destitute of *trufinelles*. The parent truffle, having accomplished its growth and the formation of the reproductive bodies within, gradually dissolves, and supplies that aliment to the young vegetable which is proper for them. The cavity originally occupied by it in the earth is then left occupied by a multitude of young truffles, of which the stronger starve or destroy the others; whilst they frequently adhere together, and, enlarging in size, reproduce the phenomena already described. One circumstance in the natural history of the truffle is still unexplained. If the method described be the only mode in which the truffle is reproduced, then it is difficult to comprehend the enormous multiplication of that vegetable in certain parts of France, where immense quantities are annually collected, without exhausting, or even diminishing, the race. If this fungus has no means of progression, how can the young truffles leave the place of their birth, and become disseminated over the soil?"

PROCEEDINGS OF SCIENTIFIC SOCIETIES.

Linnean Society of London.

April 18, 1878.—Dr. J. Gwyn Jeffreys, F.R.S., Vice-President, in the chair.

The following gentlemen were balloted for, and elected Fellows of the Society:—The Rev. A. A. Harland, M.A., Harefield Vicarage, Uxbridge; the Rev. J. J. Muir, M.A., Waterloo, near Liverpool; W. G. Piper, Esq., Cambridge Road, Anerley; and Frederick Townsend, Esq., M.A., Horrington Hall, Shipton-on-Stour.

The Rev. H. H. Higgins exhibited photographs of a large beetle, the *Dynastes neptunus* of Schönherr, and of an undetermined species of locust from Borneo. The latter has resemblances to the genus *Pseudophyllus*, but measures nine inches and a half in the expanse of its wings.

A paper, "On the Geographical Distribution of the Gulls and Terns (*Laridæ*)," was read by Mr. Howard Saunders. This group, comprising four subfamilies,—*Sterninæ* (Terns), *Rhynchopsinæ* (Skimmers), *Larinæ* (Gulls), and *Stercorarinæ* (Skuas),—notwithstanding wide marine dispersion, possesses several remarkable isolated forms. In numbers there are about fifty-three species of Terns and Skimmers, fifty Gulls, and six Skua Gulls. After entering into detail as regards various forms, their peculiarities of habit, and distribution, the author pointed out that the majority of the typical *Larinæ* are found in the North Pacific, where alone the arctic and white primaried forms are connected, through *Larus glaucescens*, with the group which have distinctly barred primaries. In the same area, also, is it shown where the three-toed *Rissa* begins to deviate from the typical four-toed gulls, and the line of connection traced between the only two species with forked tails, *Xema*. Here, also, can be traced the typical Hooded Gulls, of which *L. ridibundus* is the Palæarctic representative, and which in *L. glaucoides* extends to the Magellan Straits, while in the eastern hemisphere it is not found beyond 10° N. lat. Moreover, in the North Pacific there obtains the peculiarly coloured Tern, *Sterna aleutica*, which connects the typical *Sternæ* with the intertropical Sooty Terns, *S. lunata*, *S. anæstheta*, and *S. fuliginosa*. Of isolated groups, which have no apparent connection with the Pacific, may be mentioned the New Zealand *Larus Bulleri* and *L. scopulinus*, the Australian *L. Novæ-hollandiæ*, and the South African *L. Hartlaubi*. In the Arctic region there are the two isolated specialized genera of Gulls, *Pagophila* and *Rhodostethia* (the Ivory Gull and Ross's Gull), which are not known on the Pacific side; whilst amongst the Terns the intertropical genera, *Nænia*, *Anous*, and *Gygis*, although somewhat related among themselves, offer no particular points of union with the typical *Sterninæ*. The bulk of the evidence collected by Mr. Saunders favours the idea that the North Pacific is probably the centre of dispersion of these chiefly oceanic or shore-frequenting birds.

Mr. J. Clarke Hawkshaw next read—"Notes on the action of Limpets (*Patella*) in sinking pits in, and abrading the surface of, the Chalk, at Dover." The author states the abrasions and finely-grooved hollows are made by the lingual teeth of the limpet when feeding on the fine coating of seaweed which covers the surface of the chalk between high and low water mark. He described the limpet's track as generally of a zigzag pattern, and exhibited specimens. These bare patches vary from eight to fourteen inches square, and about a line deep. There is, moreover, a tendency to deepen, as the limpets apparently graze again over a grooved surface. The total amount of chalk thus annually denuded by all these creatures must be very considerable, though what is removed by an individual limpet appears insignificant. It was explained how mechanically, and not by any chemical agency, the limpets sink pits, which are often basin-shaped hollows, considerably below the level of the rim of the animal's shell.

May 2, 1878.—Dr. R. C. A. Prior, F.L.S., in the chair.

The following gentlemen were elected Fellows of the Society:—M. Cesar Chambre, Broad Street, E.C.; and Thomas Comber, Esq., Redcliffe, Newton-le-Willows, Lancashire.

The Foreign Members elected by ballot to fill the vacancies of those deceased during last year were:—Teodoro Carnel, Professor of Botany and Director of the Botanic Garden, Pisa; Dr. Ernest Cosson, of Paris; Dr. George Engelman, of St. Louis, Missouri, U.S.; Dr. Edouard Fenzl, Professor of Botany at the University and Director of the Botanic Garden at Vienna; and Dr. Julius Sachs, Professor of Botany at the University and Director of the Botanic Garden, Würzburg—all highly distinguished for their original researches and published labours, chiefly on Physiological and Systematic Botany.

There were no zoological papers read at this meeting, but a memorandum in a letter from the Rev. H. H. Higgins, of Liverpool, was laid before the Society. In this he says:—"I enclose a rough drawing of what I take to be a Tubularian Hydroozoon allied to *Clava*. The drawing (exhibited) is of natural size. The specimen itself came into my hands in a curious way. Not long ago I saw, in a Berlin Catalogue, a work on New Zealand Zoophytes, which, with several other books, I ordered. The former turned out to be, not a printed volume, but a collection of dried specimens, one of which is the subject of the drawing. They were labelled, 'Northern Island, New Zealand, Andrew Sinclair, M.D.; from William Gourlie, Glasgow.' Besides the object in question, among the specimens are a few fine things, one of which is an arborescent *Hydractinia*, which Mr. Thomas Higgin, of Huyton, is describing. If the enclosed drawing of the Hydroozoon represents a *Clava*, it is of enormous size, though in its dry compressed state I cannot say much about it. The hydranth is club-shaped, the hydrocaulus about ten inches—in another specimen some sixteen inches—in length. The tentacles are squamiform, covering the hydranth. The sporosacs are absent, being, I suppose, deciduous. There was a Tubularian Hydroozoon, found by the 'Challenger,' about four feet in length, a short notice of which, if I remember aright, appeared in 'Nature.'"

Mr. J. C. Galton called attention to an object of about the size of a split hazel, obtained in a garden near Barking Priory, and which was supposed to be a fossil tooth imbeded in surrounding matrix. Careful inspection, however, showed it to be one of the spined dermal plates of one of the Ray tribe of fishes, somewhat weather-worn and altered in appearance by burial.

On behalf of Mr. Thomas Higgin there was likewise shown a photograph of the natural size of *Chitina ericopsis,* and specimens of the same were exhibited under the microscope. Mr. H. J. Carter described the above as a new genus and species of the *Hydractiniidæ,* in the 'Annals and Magazine of Natural History,' 1873 (4th ser.), vol. xi., p. 13, but hitherto no figure has been given of structural or other peculiarities. Somewhat worn specimens in the British Museum Collection are labelled "Dr. Sinclair and Sir George Grey, New Zealand."—J. Murie.

Zoological Society of London.

May 7, 1878.—F. D. Goodman, Esq., F.Z.S., in the chair.

The Secretary read a report on the additions that had been made to the Society's Menagerie during the month of April, 1878, and called special attention to a Squirrel from Ecuador (*Sciurus stramineus*), of a species new to the Society's collection, and to a male Beisa Antelope (*Oryx beisa*), presented by H.H. the Sultan of Zanzibar, and kindly brought home for the Society by Capt. Pasley of H.M.S. 'Simoom,' April 27th.

Mr. T. J. Parker read some notes on the stridulating organ of *Palinurus vulgaris* which had first been described by Dr. K. Möbius, but on whose observations Mr. Parker offered several criticisms.

A communication was read from Dr. F. Buchanan White, entitled "Contributions to a Knowledge of the Hemipterous Fauna of St. Helena, and Speculations on its Origin." In the first part of his paper the author, after briefly noticing what was known with regard to the fauna and flora of that remote and interesting oceanic island, and mentioning the various theories that had been brought forward to account for their origin, discussed the difficulties of the animals, and argued that they had evidently been derived at a remote period from the Palæarctic Region by way of Madeira, the Canaries, and the Cape de Verde Archipelago. In the second part of his communication, Dr. White described the *Hemiptera* collected in St. Helena by the late Mr. T. V. Wollaston, during the recent visit of that lamented naturalist to that island. The collection included thirty species, of which five were probably introduced; one appeared to be indigenous, but seemed identical with a European species, and the remaining twenty-four were regarded by the author as new and peculiar to the island. Seven new genera and one new subgenus were created for the reception of ten of the species, the rest, with one exception, being referred to European genera.

Specimens and drawings of details were exhibited in illustration of the paper.

Mr. P. L. Sclater read some further remarks on *Fuligula Nationi*, a species of duck from Western Peru, of which he had lately received a nearly adult male from Prof. Nation, the discoverer of the species.

Mr. A. G. Butler read the descriptions of a small collection of *Lepidoptera* made at Kingston, Jamaica, by Mr. James J. Bowry.

Mr. Edgar A. Smith read a paper containing the description of three new land shells from Jamaica and Borneo.

A communication was read from Mr. D. G. Elliot, containing a memoir on the Fruit Pigeons of the genus *Ptilopus*. Mr. Elliot recognised seventy-one species of this genus.

May 21, 1878.—F. D. GODMAN, Esq., F.Z.S., in the chair.

A communication was read from Lieut.-Col. R. H. Beddome, containing the description of a new genus and species of Snakes, of the family of *Calamariidæ*, from Southern India, proposed to be called *Xylophis indicus*.

Mr. P. L. Sclater read the tenth of a series of reports on the collection of birds made during the voyage of H.M.S. Challenger, containing an account of the birds of the Atlantic Islands and of Kerguelen's Land; and of the miscellaneous collections made by the Expedition.

Mr. J. Wood-Mason described several new or little known *Mantidæ* from India, Australia, and other localities.

Mr. H. W. Bates read a paper containing the description of new genera and species of geodephagous *Coleoptera* from Central America, belonging to the families *Cicindelidæ* and *Carabidæ*.

Mr. G. French Angas read the description of a new species of *Tudicula*, which he proposed to name *T. inermis*.

A communication was read from the Marquis of Tweeddale, being the ninth of his contributions to the Ornithology of the Philippines. The present paper gave an account of the collection made by Mr. A. H. Everett in the Island of Palawan, and contained the descriptions of nine new species, namely, *Tiga Everetti*, *Dicrurus palawanensis*, *Broderipus palawanensis*, *Trichostoma rufifrons*, *Drymocataphus cinereiceps*, *Brachypus cinereifrons*, *Criniger palawanensis*, *Cyrtostomus aurora*, and *Corvus pusillus*. The collection likewise contained three examples of the remarkable *Polyplectron emphanes*, of which the locality was previously unknown and specimens were excessively rare.

Prof. A. H. Garrod read a paper, in which he gave a description of the tracheæ of *Tantalus loculator* and of *Vanellus cayennensis*.

A second paper, by Professor Garrod, contained some notes on the anatomy of the Great-headed Maleo (*Megacephalon maleo*).—P. L. SCLATER, *Secretary*.

ENTOMOLOGICAL SOCIETY OF LONDON.

May 1, 1878.—H. W. BATES, Esq., F.L.S., F.Z.S., President, in the chair.

Mr. Henry John Elwes, F.L.S., F.Z.S., of Preston House, Cirencester, was elected an ordinary Member. Mr. Peter Cameron, of 31, Willow Bank Crescent, was elected a Subscriber.

Mr. Dunning drew attention to the fact that the present meeting marked the forty-fifth anniversary of the foundation of the Society.

Mr. W. L. Distant exhibited a specimen of the Hemipteron *Tetroda bilineata*, Walk., as a remarkable instance of immunity from the effects of damp, the same having been kept in a relaxing-pan for more than four months.

Mr. Distant also communicated a paper entitled "Notes on some Hemiptera-Homoptera, with Descriptions of new Species," in which he drew attention to the uncertainty of generic calculations as to geographical distribution; the *Homoptera* affording a good illustration in the family *Cercopida*, especially the genus *Cercopis*.

The President remarked that the old coleopterous genus *Buprestis* had, like *Cercopis*, at one time almost ceased to exist, through the generic subdivision it had undergone.

Part 1 of the 'Transactions' for 1878 was on the table.—W. L. DISTANT, *Secretary*.

WHITE WHALE AT THE WESTMINSTER AQUARIUM.—A specimen of the White Whale (*Beluga*), taken on the coast of Labrador, was safely housed in the large tank on the 29th May. The consignment originally consisted of four, two of which were intended for the Westminster Aquarium, but one of these died on the voyage; its death was the result of an accident, caused by a heavy roll of the 'Circassian,' in which steamer they were conveyed to Liverpool. Unlike the one received at Westminster last year, this specimen appears to be in good health and to have suffered little from its enforced confinement for five weeks in a large box, packed on a layer of sea-weed. In transit they are kept thoroughly moist—an indispensable condition of their existence—by the application of water every three or four minutes, both day and night. The specimen at the Aquarium is nearly full grown; its age is estimated at five years; length over all thirteen feet six inches. It has so far recovered from the effects of its long confinement as to remain some minutes at a time under water and to consume between fifteen and twenty pounds of live eels a day.

BRITISH MUSEUM

Fig. 1.

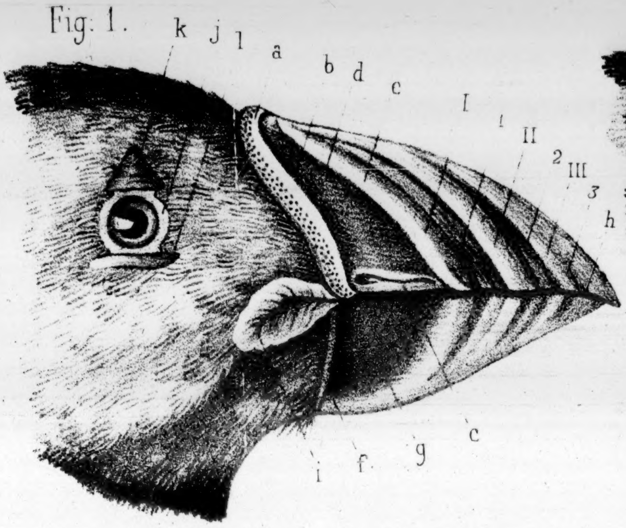

Fig. 2.

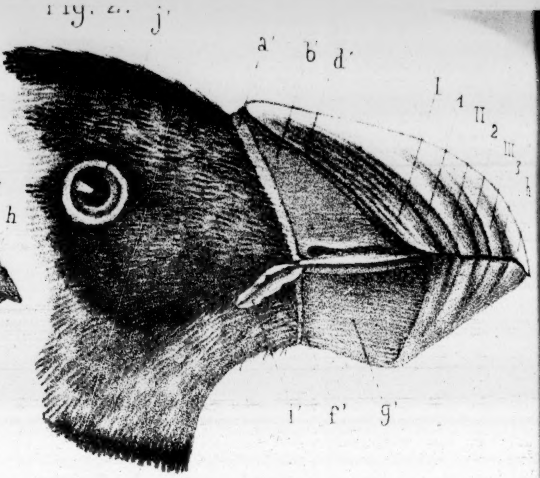

Fig. 3.

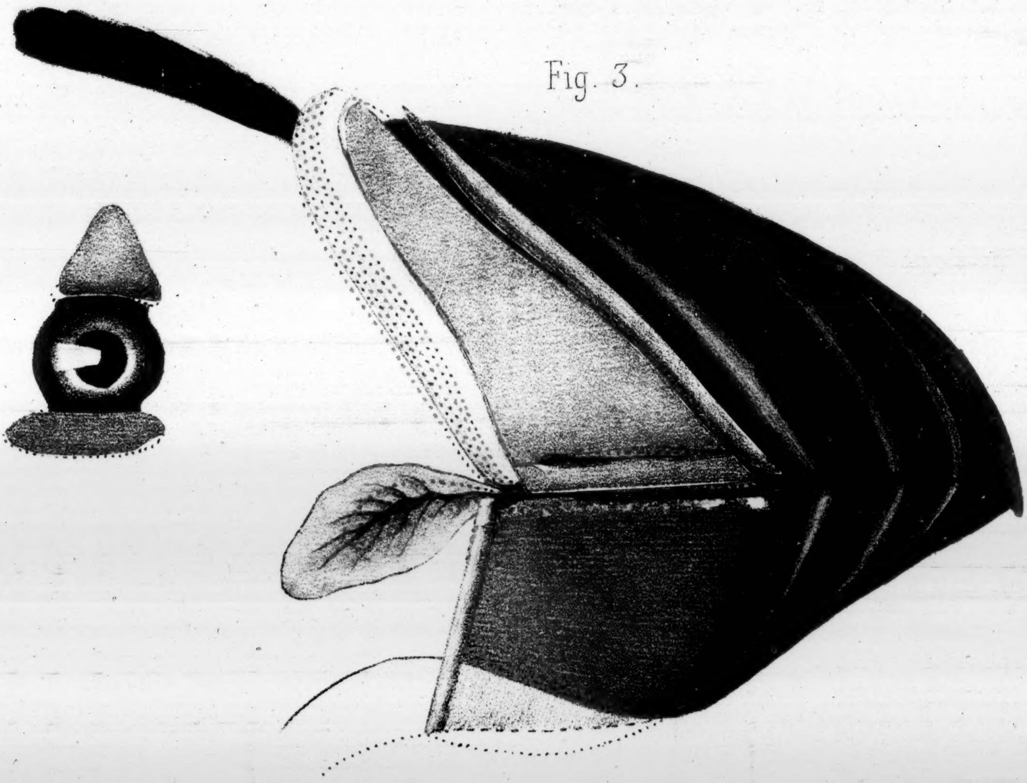

Fig. 4.

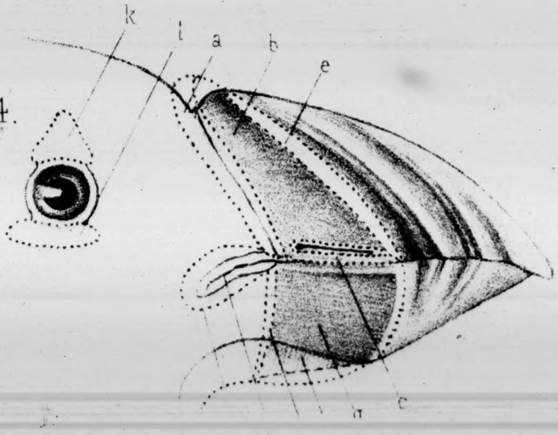

Fig. 5.